

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) An imaging agent which comprises a synthetic caspase-3 inhibitor labelled with an imaging moiety, wherein following administration of said labelled caspase-3 inhibitor to the mammalian body *in vivo*, the imaging moiety is suitable for imaging using SPECT or PET and said imaging moiety is chosen from:

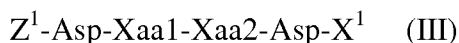
(a) a radioactive metal ion chosen from ^{99m}Tc , ^{111}In , ^{64}Cu , ^{67}Cu , ^{67}Ga or ^{68}Ga ;

(b) a gamma-emitting radioactive halogen which is ^{123}I ;

(c) a positron-emitting radioactive non-metal chosen from ^{18}F , ^{11}C , ^{124}I or ^{13}N ;

wherein the synthetic caspase-3 inhibitor has a K_i for caspase-3 of less than 500 nM and comprises one or more of the caspase-3 inhibitors defined in (i) to (iii):

- (i) a tetrapeptide derivative of Formula III



where Z^1 is a metabolism inhibiting group attached to the N-terminus of the tetrapeptide;

Xaa1 and Xaa2 are independently any amino acid;

X^1 is an $-\text{R}^1$ or $-\text{CH}_2\text{OR}^2$ group attached to the carboxy terminus of the tetrapeptide;

where R^1 is H, $-\text{CH}_2\text{F}$, $-\text{CH}_2\text{Cl}$, C_{1-5} alkyl, C_{1-5} alkoxy or $-(\text{CH}_2)_q\text{Ar}^1$, where q is an integer of value 1 to 6 and Ar^1 is C_{6-12} aryl, C_{5-12} alkyl-aryl, C_{5-12} fluoro-substituted aryl, or C_{3-12} heteroaryl;

R^2 is C_{1-5} alkyl, C_{1-10} acyl or Ar^1 ;

- (ii) a 2-oxindole sulfonamide;

- (iii) a dipeptide of Formula VI:



where the $-\text{CH}_2\text{SR}^1$ group is attached to the carboxy terminus of the dipeptides, and Z^1 and R^1 are as defined for Formula (III).

2. (Cancelled)
3. (Previously presented) The imaging agent of Claim 1, where the synthetic caspase-3 inhibitor has a molecular weight of 150 to 3000 Daltons.
4. – 13. (Cancelled)
14. (Previously presented) The imaging agent of Claim 1, where the synthetic caspase-3 inhibitor is selective for caspase-3 over caspase-1, by a factor of at least 50.
15. (Cancelled).
16. (Cancelled).
17. (Previously presented) A radiopharmaceutical composition which comprises the imaging agent of Claim 1, together with a biocompatible carrier, in a form suitable for mammalian administration.
18. (Original) The radiopharmaceutical composition of claim 17, where the imaging moiety comprises a positron-emitting radioactive non-metal or a gamma-emitting radioactive halogen.
19. – 25. (Cancelled).
26. (Currently amended) A kit for the preparation of the radiopharmaceutical composition of Claim 18, which comprises a precursor in sterile, apyrogenic form, said precursor being a non-radioactive derivative of a caspase-3 inhibitor, wherein the caspase-3 inhibitor is as

defined in claim 1, wherein said non-radioactive derivative is capable of reaction with a source of the positron-emitting radioactive non-metal or gamma-emitting radioactive halogen to give the desired radiopharmaceutical, and said non-radioactive derivative is chosen from:

- a an organometallic derivative such as a trialkylstannane or a trialkylsilane;
- b a derivative containing an alkyl halide, alkyl tosylate or alkyl mesylate for nucleophilic substitution;
- c a derivative containing an aromatic ring activated towards nucleophilic or electrophilic substitution;
- d a derivative containing a functional group which undergoes facile alkylation;
- e a derivative which alkylates thiol-containing compounds to give a thioether-containing product.

27. (Cancelled)

28. (Previously presented) The kit of Claim 26, where the source of the positron-emitting radioactive non-metal or gamma-emitting radioactive halogen is chosen from:

- a halide ion or F^+ or I^+ ; or
- b an alkylating agent chosen from an alkyl or fluoroalkyl halide, tosylate, triflate or mesylate;

29. (Cancelled).

30. (Previously presented) The kit of claim 26, where the precursor is bound to a solid phase.

31. (Previously presented) A method of diagnosis of a caspase-3 implicated disease state of the mammalian body, wherein said mammal is previously administered with the radiopharmaceutical composition of claim 17 which comprises imaging said mammal using SPECT or PET.